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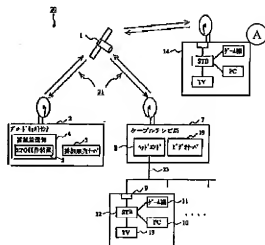
(54) Title: ELECTRONIC PROGRAM GUIDE DISTRIBUTION DEVICE AND ELECTRONIC PROGRAM GUIDE DISTRIBUTION METHOD

AbstractProblem

To provide an electronic program guide distribution device and an electronic program guide distribution method that make purchasing of copyrighted works, such as TV programs, easy for viewers of digital television broadcasting for purposes other than personal use.

Means to solve

Provided is an electronic program guide distribution device for displaying an electronic program guide on a terminal device of a viewer of a digital broadcasting compatible television, wherein the electronic program guide distribution device is characterized by being equipped with a vending program information display means that displays information in said electronic program guide in order to indicate that [certain] programs are vendible programs when said programs displayed in said electronic program guide are vendible programs.



- Key: 2 Broadcast center  
3 Program vending server  
4 Program broadcasting unit  
5 EPG generator

7	Cable television station
8	Head end
11	Game machine
19	Video server
A	Game machine

[There are no amendments to this patent.]

#### Claims

1. An electronic program guide distribution device characterized by being equipped with an electronic program guide distribution means that displays an electronic program guide on receiving terminal devices owned by respective viewers

by means of digital broadcasting that supports interactive communications between a broadcasting station, which has functions to broadcast programs to the receiving terminal devices of said respective viewers and

obtain information transmitted from said respective viewers via said receiving terminal devices, and the viewers and

a vendible content information display means that adds information in order to indicate that [certain] contents of the programs displayed in said electronic program guide are vendible when the contents of said programs displayed in said electronic program guide are vendible before displaying said electronic program guide on the receiving terminal devices of said respective viewers.

2. The electronic program guide distribution device described in Claim 1, characterized in that said interactive communications between said broadcasting station and the receiving terminal devices of said respective viewers are carried out by means of a communication mean that involves a satellite.

3. The electronic program guide distribution device described in Claim 1 or 2, characterized in that it is further equipped with an intent acquisition means that obtains said respective viewers' intents of purchasing said vendible contents by means of said interactive communications when said respective viewers want to purchase said vendible contents.

4. The electronic program guide distribution device described in one of Claims 1 and 2, characterized in that it is further equipped with a means that allows said respective viewers to choose to purchase either some or all of said vendible contents and obtains information that specifies all of said vendible contents when the viewers want to purchase [all of] said vendible contents, or information that specifies some of said vendible contents when said respective viewers want to purchase said some of said vendible contents, from the receiving terminal devices of said viewers and

a means that specifies the receiving terminal devices of said viewers.

5. An electronic program guide distribution method characterized by comprising a first step in which program information to be displayed in an electronic program guide, which is broadcast to receiving terminal devices of respective viewers

by means of digital broadcasting that supports interactive communications between a broadcasting station, which has functions to broadcast programs to the receiving terminal devices of said respective viewers and

obtain information transmitted from said respective viewers via said receiving terminal devices, and the viewers, is generated;

a second step in which when [certain] contents of the programs displayed in the program information generated in said first step are vendible contents, display information that enables said respective viewers to recognize that said contents are programs for vending is added to the program information of said electronic program guide; and

a third step in which said electronic program guide, to which the information indicating the vendible contents was added in said second step, is transmitted and displayed on the receiving terminal devices of said respective viewers.

6. The electronic program guide distribution method described in Claim 5, characterized by being further equipped with a fourth step in which when viewers want to purchase said vendible contents based on said electronic program guide displayed on the receiving terminal devices of said respective viewers in said third step,

pieces of information that specify said vendible contents that said viewers want to purchase are obtained from the receiving terminal devices owned by said viewers.

#### Detailed explanation of the invention

[0001]

Technical field of the invention

The present invention pertains to an electronic program guide distribution device and electronic program guide distribution method; for example, it pertains to an electronic program guide distribution device and electronic program guide distribution method in which information regarding the vendibility of programs is added to program information.

[0002]

Prior art

In the past, copyrighted works and media types used for delivering them have been interdependent. That is, different media have been used to distribute copyrighted works of different types; for example, copyrighted works such as movies and animations have been distributed in the forms of media such as video tapes, television broadcasting, and DVDs (Digital

Video Disks); copyrighted works such as novels and comics have been distributed in the form of a book; and music has been distributed in the form of media such as radio [broadcasting], records, CDs (Compact Disks), and cassette tapes. In addition, these pieces of information have generally been delivered to individual general consumers from large organizations, such as music companies and publishing companies, via distributors and retailers. As such, individual persons have rarely sent out such information to the public. In order for an individual person to send out his/her own personal copyrighted work to the public, he/she has had to spend a large sum of money and time for self-publishing, issue a coterie magazine, or submit it to newspapers, for example.

[0003]

However, due to the recent rapid progress in the so-called IT revolution, information can now be sent out across the world easily by anybody utilizing the Internet. The factor behind the IT revolution is digitization of information and networks, and information transmission means have progressed to a great extent toward multimedia as the IT revolution has progressed. That is, video and audio data of movies and music titles can be digitized and distributed across the world via a single digitalized network, and pieces of digitized information can be obtained from information sources all over the world. For example, in Japan, it is now normal for ordinary children to distribute scenic photos captured in front of their homes across the 5 continents of the world at modest cost. As individual persons become able to distribute information easily, demands grow quickly for [capabilities to] insert popular animation characters into pieces of information they transmit and/or add matching music to video data.

[0004]

Furthermore, television broadcasting also has made a transition from the conventional analog broadcasting to digital broadcasting and is becoming gradually fused with the Internet that in the past was mainly considered a computer-related medium. Because data on those digitized television programs can be processed easily, demands for the utilization of popular animation characters that are brought into computers from television broadcasts, for example, they are inserted into private homepages, used as sales campaign mascots, or used for some kinds of fairs, are expected to rapidly increase.

[0005]

Incidentally, copyrights on movies, music, and photos are granted to their authors. Then, the law prohibits copying of those movies and music for purposes other than personal amusement in order to protect the authors of those copyrighted works. For example, when popular animation

characters are to be used for an advertisement, a private homepage, a training course, or a fair, for example, the copyright owners of those copyrighted works need to be contacted to obtain individual agreements.

[0006]

Problems to be solved by the invention

However, some copyrighted works involve complicated right ownership relationships, and it has been very difficult for individual persons to readily use copyrighted works for purposes other than personal amusement. It has also been very difficult for distributors of copyrighted works to accommodate individuals who want to use those copyrighted works for purposes other than personal amusement, that is, so-called retail customers. Incidentally, it is becoming possible to sell copyrighted works to those retail customers using IT technology that has greatly progressed in recent years.

[0007]

As such, the objective of the present invention is to provide an electronic program guide distribution device and an electronic program guide distribution method that allow those retail customers to easily purchase copyrighted works for purposes other than personal amusement.

[0008]

Means to solve the problems

In order to achieve the aforementioned objective, the present invention provides an electronic program guide distribution device characterized by being equipped with an electronic program guide distribution means that displays an electronic program guide on receiving terminal devices owned by respective viewers by means of digital broadcasting that supports interactive communications between a broadcasting station, which has functions to broadcast programs to the receiving terminal devices of the aforementioned respective viewers and obtain information transmitted from the aforementioned respective viewers via the aforementioned receiving terminal devices, and the viewers and a vendible content information display means that adds information in order to indicate that [certain] contents of the programs displayed in the aforementioned electronic program guide are vendible when the contents of the aforementioned programs displayed in the aforementioned electronic program guide are vendible before displaying the aforementioned electronic program guide on the receiving terminal devices of the aforementioned respective viewers.

[0009]

Furthermore, the aforementioned electronic program guide distribution device may be configured such that the aforementioned interactive communications between the aforementioned broadcasting station and the receiving terminal devices of the aforementioned respective viewers are carried out by means of a communication mean that involves a satellite.

[0010]

Furthermore, the aforementioned electronic program guide distribution device may be further equipped with an intent acquisition means that obtains the aforementioned respective viewers' intents of purchasing the aforementioned vendible contents by means of the aforementioned interactive communications when the aforementioned respective viewers want to purchase the aforementioned vendible contents.

[0011]

In addition, the aforementioned electronic program guide distribution device may be further equipped with a means that allows the aforementioned respective viewers to choose to purchase either some or all of the aforementioned vendible contents and obtains information that specifies all of the aforementioned vendible contents when the viewers want to purchase [all of] the aforementioned vendible contents, or information that specifies some of the aforementioned vendible contents when the aforementioned respective viewers want to purchase the aforementioned some of the aforementioned vendible contents, from the receiving terminal devices of the aforementioned viewers and a means that specifies the receiving terminal devices of the aforementioned viewers.

[0012]

Furthermore, in order to achieve the aforementioned objective, the present invention provides an electronic program guide distribution method characterized by comprising a first step in which program information to be displayed in an electronic program guide, which is broadcast to receiving terminal devices of respective viewers by means of digital broadcasting that supports interactive communications between a broadcasting station, which has functions to broadcast programs to the receiving terminal devices of the aforementioned respective viewers and obtain information transmitted from the aforementioned respective viewers via the aforementioned receiving terminal devices, and the viewers, is generated; a second step in which when [certain] contents of the programs displayed in the program information generated in the aforementioned first step are vendible contents, display information that enables the aforementioned respective viewers to recognize that the aforementioned contents are programs for vending is added to the

program information of the aforementioned electronic program guide; and a third step in which the aforementioned electronic program guide, to which the information indicating the vendible contents was added in the aforementioned second step, is transmitted and displayed on the receiving terminal devices of the aforementioned respective viewers.

[0013]

Furthermore, the aforementioned electronic program guide distribution method may be further equipped with a fourth step in which when viewers want to purchase said vendible contents based on said electronic program guide displayed on the receiving terminal devices of said respective viewers in said third step, pieces of information that specify said vendible contents that said viewers want to purchase are obtained from the receiving terminal devices owned by said viewers.

[0014]

Embodiment of the invention

A preferred embodiment of the present invention will be explained in detail below with reference to Figure 1 through Figure 6. Electronic program guide will be abbreviated as EPG (Electronic Program Guide), hereinafter. In addition, the contents of programs to be vended will be denoted simply as programs to be vended, for example. Figure 1 is a diagram showing an example of EPG distribution system 20 in which the EPG distribution device pertaining to an embodiment of the present invention operates. EPG distribution system 20 includes satellite 1, broadcast center 2, and cable television station 7. Broadcast center 2 and cable television station 7 are connected via satellite communication channels 21 and are capable of carrying out interactive communications. Satellite communication channels 21 are relayed by satellite 1. Satellite 1 is a communication satellite or a broadcasting satellite launched into a geostationary satellite orbit; and it is loaded with a relay antenna for receiving/transmitting relayed radio waves, solar cell panels for supplying power, and a transponder for frequency-conversion and amplification of the relayed radio waves, for example. Although a communication satellite is assumed for satellite 1 here, it may be a broadcasting satellite.

[0015]

Broadcast center 2 is equipped with program broadcasting unit 4 and program vending server 3. Program broadcasting unit 4 is a section that provides the function of a normal television station that distributes normal digital television broadcasts. Program broadcasting unit 4 is equipped with EPG generator 5. The EPG is a table of television programs that viewers can browse on a terminal such as a television. Because digital television broadcasting can provide



many more channels to viewers than conventional analog television broadcasting, a channel that broadcasts only the table of television programs by means of the EPG is provided for viewers' convenience. EPG generator 5 is a terminal device configured with a personal computer (denoted as PC hereinafter), and an operator enters contents for the EPG using a GUI (Graphical User Interface) provided on EPG generator 5. The contents entered through EPG generator 5 are broadcast on an EPG channel.

[0016]

Program vending server 3 is a server that distributes programs ordered by viewers upon receiving program vending orders from the viewers. A variety of programs, for example, news, dramas, tabloid shows, and animations, are broadcast from program broadcasting unit 4. Of these programs, programs that are placed for sale are stored in program vending server 3, and they are distributed to the viewers from there via satellite communication channels 21. When these programs are to be vended to general viewers, their ownership rights are subject to related complicated regulations and agreements due to different copyright owners, distributorship owners, sales terms, and sale prices. It is practically impossible for a general consumer to purchase a program by negotiating with the concerned party individually. These complicated matters that are required are handled by the administrator of broadcast center 2, an agent, or an entrusted third party; and viewers can purchase the programs stored in program vending server 3 simply by accessing program vending server 3.

[0017]

Cable television station 7 is equipped with head end 8 and video server 19, for example. Head end 8 is connected to respective viewer terminal units 9 via cable television channels 23. Head end 8 is hardware provided inside cable television station 7, that is, a device that receives digital signals from satellite 1 and converts them before retransmitting them to cable television channels 23. Video server 19 stores such contents as a variety of programs and movies, and viewers can watch movies by requesting that they be distributed from video server 19. This system is called video-on-demand. Although viewers purchased or rented video tapes in order to watch movies in the past, they can have desired contents such as movies delivered using the video-on-demand system while at home.

[0018]

Typically, viewer terminal unit 9 is installed at a viewer's home; and it is configured with set-top box (STB) 12, digital television 13, game machine 11, and PC 10, for example. Cable television channel 23 is connected to set-top box 12; and game machine 11, digital television 13,

and PC 10 are then connected to set-top box 12. Digital television 13 is a television that is compatible with digitized television broadcasting networks, interactive communications, and multimedia information.

[0019]

Set-top box 12 is attached to digital television 13 in order to play the role of a conventional television tuner, for example, demodulation of a digital signal that was modulated at the time of its transmission, correction of code errors that occurred during the transmission, and selection of a desired broadcast out of a multiplexed digital signal. In addition, set-top box 12 enables interactive communications between viewer terminal unit 9 and cable television station 7. In addition, set-top box 12 has a large-capacity hard disk, whereby television programs and distributed contents can be stored in this hard disk. In addition, set-top box 12 is compatible with multimedia and has built-in Ethernet (registered trademark), a modem, and a satellite reception function. Thus, game machine 11 and PC 10 can be connected to set-top box 12 directly.

[0020]

Interactive communications are enabled between head end 8 and digital television 13, game machine 11, and PC 10 terminals. As such, interactive communications are enabled between viewer terminal unit 9 and broadcast center 2, whereby programs can be delivered to viewer terminal unit 9 from broadcast center 2, and desired purchasing programs can be specified from viewer terminal unit 9 to broadcast center 2. In addition, although the present embodiment is explained based on the assumption that only 1 viewer terminal unit 9 is involved, multiple viewer terminal units are actually connected to head end 8. In addition, as is the case with viewer terminal unit 14, viewer terminal unit 14 and satellite 1 may be connected directly without involving a cable television station. This situation applies to a case where an individual has a satellite communication base station installed at his home. In addition, communications with satellite 1 may be carried out from a mobile terminal device.

[0021]

Figure 2 is a diagram showing an example of an EPG. The EPG is generated by EPG generator 5 and is transmitted from program broadcasting unit 4. The EPG is received by cable television station 7 via satellite communication channel 21 and is displayed on digital television 13 via head end 8, cable television channel 23, and set-top box 12. Also, it can be displayed on PC 10 via set-top box 12. Horizontal column 25 represents respective broadcast centers, and vertical column 26 represents broadcasting time slots. Pieces of information, such as programs

names, pertaining to programs broadcast from respective broadcast centers at respective time slots are displayed in the respective fields where horizontal column 25 and vertical column 26 intersect.

[0022]

Field 27 indicates that broadcast center CS Sanya broadcasts "Tora-chan [Dear Tora]" from 10:00 a.m. to 11:00 a.m. Indication 28 "\*e-contents" in field 27 indicates that this program is vendible. That is, program "Tora-chan" is stored in program vending server 3, and viewers can purchase this program. It is clear from this EPG that "Hono no faitaa [Fiery Fighter]" broadcast by broadcast center WAITAI from 10:00 a.m. to 11:00 a.m. is placed for sale also.

[0023]

In the past, a television program guide was provided by means of printed media such as newspapers and magazines, whereby viewers checked the broadcasting times and broadcasting stations of programs they wanted to watch. In contrast, because program information is distributed electronically in the case of the EPG, various characteristics are exhibited that were lacking in the past. For example, viewers can search programs using a program category as a key. If a viewer runs a search for sports programs, only sports programs can be extracted out of the EPG and displayed. In addition, in the event that the broadcasting of a relayed program of a baseball game is to be extended, for example, an extended recording can be applied automatically.

[0024]

Figure 3 is a diagram showing the data structure of digital broadcasting from the broadcasting unit of broadcast center 2. In the case of digital broadcasting, video, audio, and data are all transmitted in the form of the same MPEG (Moving Picture Experts Group) 2-TS (Transport Stream) packet. This packet is 188 bytes in size. This packet will be referred to as a TSP. A series of TSPs 41a, 41b, 41c, ... are transmitted from program broadcasting unit 4. TSPs 41a, 41b, 41c, ... are each configured with TSP header 42, adaptation field 43, and payload 44 as shown in Figure 3.

[0025]

TSP header 42 is configured with a sync byte, an error indication, a PID (Packet Identification), and a cyclic counter, for example. The PID is an identifier for identifying each packet, and different PIDs are assigned to the video and the audio. Adaptation field 43 contains a variety of additional information. Payload 44 is configured with video, audio, and data

information, PSI (Program Specific Information), and SI (Program Arrangement Information), for example.

[0026]

The PSI includes a PAT (Program Association Table), that is, a table that associates PIDs with specific programs, and a PMT (Program Map Table), for example. On the other hand, detailed information about each program and the servicing status are sent in the form of a table other than the PSI. This table comes in multiple kinds, and they are all called SIs. Of these, the main 2 SIs related to the EPG are an EIT (Event Information Table) and an SDT (Service Description Table). The EIT contains pieces of information about program start times, program durations, program titles, cast members, program contents, categories, and whether programs are vendible or not, for example. The SDT contains information pertaining to the servicing status.

[0027]

Figure 4 is a block diagram of program vending server 3. At program vending server 3, control unit 33, input/output unit 31, communication control unit 32, memory unit 34, and other equipment not shown are connected together via bus line 38 such as a data bus. Control unit 33 is configured with a CPU (Central Processing Unit), a ROM (Read-Only Memory), and a RAM (Random Access Memory), for example. The CPU controls the respective components and carries out computations of various kinds. The ROM stores programs and parameters that are used by the CPU to control the respective components and carry out the computations. The RAM is used for temporary storage of a program and parameters of various kinds to be executed by the CPU as they are read from memory unit 34 and for providing a working memory for the CPU.

[0028]

Input/output unit 31 is connected to the Internet not shown, satellite communication channel 21, a keyboard, a display, and a printer, for example. In addition, the connection of input/output unit 31 to the Internet is achieved by means of a general telephone line, an ISDN (Integrated Services Digital Network) line, or a wireless telephone channel (a portable telephone, a PHS, etc.). Input/output unit 31 displays a distribution menu screen on viewer terminal unit 9 via the Internet or satellite communication channel 21, whereby it accepts a program purchase request from the viewer and delivers the applicable program to set-top box 12. The keyboard, the printer, and the display connected to input/output unit 31 are used by an operator for maintenance/management of program vending server 3. Communication control unit 32 works with control unit 33 so as to perform a response function to a processing request sent through the Internet or satellite channel 21.

[0029]

Memory unit 34 is configured with program unit 35, sales record section 36, and program vending section 37, for example. Programs to be vended are stored in the form of contents (electronic information) in program vending section 37. Program unit 35 is configured with a program playback section, an input/output section, and a distribution section, for example. When a viewer specifies a vendible program in the EPG and indicates his/her intent to watch it by following an instruction, for example, "Please press button 1 to watch," displayed on the screen, the program playback section delivers the program stored in program vending section 37 to viewer terminal unit 9 via satellite communication channel 21 in order to allow the viewer to watch said [program]. Once the viewer finishes watching the program, the input/output section displays a sales menu screen on digital television 13, for example, and prompts the viewer to enter data needed for the sale of the program.

[0030]

The distribution section delivers the requested vending program to viewer terminal unit 9. The delivered program is stored in the hard disk of set-top box 12 or a hard disk installed in PC 10, and the viewer can use this program for purposes other than personal amusement. Data input through the sales menu screen by the viewer are stored in the sales record section. The distribution section delivers the program based on this record. Furthermore, because broadcast center 2 and viewer terminal [unit] 9 are connected using the interactive communication channel in the case of digital broadcasting, broadcast center 2 can specify the viewer and the program being watched by said viewer in real-time.

[0031]

Figure 5 is a diagram showing sales menu screen 51 displayed on digital television 13 by the input/output section of program unit 35. Sales menu screen 51 includes customer number field 52 and customer name field 53. A number that specifies each customer is displayed in customer number field 52. The name of a viewer that has signed an agreement with broadcast center 2 is displayed in customer name field 53. Because broadcast center 2 and viewer terminal unit 9 are connected for interactive communications, broadcast center 2 specifies the viewer. Said [pieces of information] are displayed automatically.

[0032]

In addition, sales menu screen 51 includes purchasing program name field 54, broadcasting date/time field 55, and broadcasting station field 56. The title of the program to be

purchased is displayed in purchasing program name field 54. The date/time the program is broadcast is displayed in broadcasting date/time field 55. The name of the broadcasting center that broadcasts the program is displayed in broadcasting station field 56.

[0033]

In addition, sales menu screen 51 includes purchasing portion field 57, use period field 58, use purpose field 59, and price field 62. The viewer can purchase a portion of a program to be vended or the entire [program]. For example, when the viewer wants to purchase a 10-20-min portion after the beginning of the 1-hour long "Tora-chan" broadcast, he/she enters "10-20 min" in purchasing portion field 57. The period during which the viewer can use the purchased program is entered in use period field 58. Use period field 58 is implemented in the form of a combo box, whereby the viewer can select the use period of the program being purchased from "10 days," "1 month," "6 months," and "indefinite period." The delivered program is devised such that said program becomes unusable when the viewer has exceeded the use period he/she entered.

[0034]

The purpose for which the program being purchased is to be used by the viewer is entered in use purpose field 59. Use purpose field 59 is implemented in the form of a combo box, whereby the viewer selects his/her use purpose of the program being purchased from "homepage," "advertisement," "use for a fair," "use for a training course," and "other." The price of the program to be purchased by the viewer is displayed in price field 62 automatically. The price displayed in price field 62 varies across programs. Also, when the viewer wants to purchase a portion of a program, the price varies depending on the length.

[0035]

In addition, sales menu screen 51 includes purchase button 60 and cancel button 61. The viewer confirms the data entered in the respective fields of sales menu screen 51 prior to the purchase of the program. Then, he/she selects purchase button 60 to purchase the program, or cancel button 61 to not purchase it. When purchase button 60 is selected by the viewer, the data entered in sales menu screen 51 are sent to program vending server 3 via cable television channel 23 and satellite channel 21 and are stored in sales record section 36. When cancel button 61 is selected, the purchase is canceled. When the viewer purchases a program, the purchase charge can be withdrawn from the viewer's bank account or by means of a credit card, the charge can be subtracted from the remaining amount on a prepaid card inserted in set-top box 21, or a payment can be sent by mail.

[0036]

Figure 6 is a flow chart showing operations carried out by EPG distribution system 20 to the point when a program is purchased by a viewer. An EPG is edited/generated by EPG generator 5. At this time, in the EPG, each vendible program is affixed with a display indicating that said program is a program to be vended (Step 1). Next, the EPG is broadcast by program broadcasting unit 4, whereby the viewer can distinguish the vendible programs from the other programs using the EPG displayed on a terminal device such as digital television 13 (Step 2). Next, the viewer selects a program he/she wants to purchase out of the vendible programs (Step 3).

[0037]

Next, program vending server 3 broadcasts the program that the viewer wants to purchase on the viewer's terminal device in order to allow the viewer to watch it (Step 4). Once the viewing is finished, program vending server 3 displays sales menu screen 51 on the viewer's terminal device. Then, the viewer enters the required items in the respective fields of sales menu screen 51 displayed on the viewer's terminal device (Step 5). Next, the viewer confirms the respective pieces of data entered in sales menu screen 51. Then, he/she selects purchase button 60 to purchase the program, or cancel button 61 when not to purchase it (Step 6).

[0038]

When cancel button 61 is selected (Step 6; N), the purchase of the program is canceled. When purchase button 60 is selected (Step 6; Y), the items entered by the viewer are transmitted to program vending server 3. Upon receiving the program purchase data from the viewer's terminal device, program vending server 3 stores them in sales record section 36 and delivers the program to the viewer (Step 7).

[0039]

Effect of the invention

According to the present invention, because the pieces of information indicating [programs] vendible to viewers are displayed on the EPG, the viewers can identify the vendible programs in the EPG. Here, purchase means that data recorded for a program can be bought, and that the right for a viewer to use said program for purposes other than personal amusement is also included.

### Brief description of the figures

Figure 1 is a diagram showing an example EPG distribution system in which the EPG distribution device pertaining to the present embodiment operates.

Figure 2 is a diagram showing an example of the EPG.

Figure 3 is a diagram showing the data structure of digital broadcast data transmitted from the broadcasting unit of a broadcast center.

Figure 4 is a block diagram showing the configuration of the program vending server.

Figure 5 is a diagram showing the sales menu screen.

Figure 6 is a flow chart showing operations of EPG distribution system 20.

### Explanation of symbols

- 1 Satellite
- 2 Broadcast center
- 3 Program vending server
- 4 Program broadcasting unit
- 5 EPG generator
- 7 Cable television station
- 8 Head end
- 9 Viewer terminal unit
- 10 PC
- 11 Game machine
- 12 Set-top box
- 13 Digital television
- 14 Viewer terminal unit
- 19 Video server
- 21 Satellite communication channel
- 23 Cable television channel
- 31 Input/output unit
- 32 Communication control unit
- 33 Control unit
- 34 Memory unit
- 42 TSP head
- 44 Payload



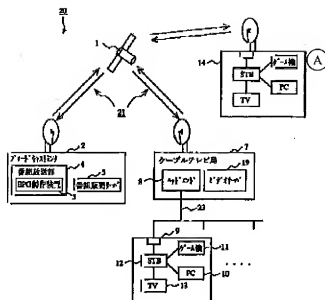


Figure 1

- Key: A     Game machine  
 2     Broadcast center  
 3     Program vending server  
 4     Program broadcasting unit  
 5     EPG generator  
 7     Cable television station  
 8     Head end  
 11     Game machine  
 19     Video server

時間 プログラム おはよう	BS東日本 (a)	CS山形 (d)	ワイワイ (f)	CS千代田 (i)
10:00a.m.	ニュース (b)	トクちゃん (e) *e-contents	炎の7人 (g) *e-contents	温泉の街 (j)
11:00a.m.	おはよう一番 (c)	そば屋のウメさん (e)	ど根性一発勝負 (h)	ニュースイレブン (k)

Figure 2

- Key: A     BS Higashi Nippon

- B News  
 C Ohayo Ichiban [First thing in the morning]  
 D CS Sanya  
 E Sobaya no Ume-san [Ume of the noodle shop]  
 F WAIWAI  
 G Hono no faitaa [Fiery Fighter]  
 H Dokonjo Ippatsu Shobu [One-shot deal with fighting spirit]  
 I CS Chiyoda  
 J Onsen no yado [Lodges at Hot Springs]  
 K News Eleven  
 25 Broadcast center  
 26 Time  
 27 Tora-chan [Dear Tora]

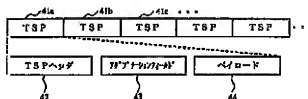


Figure 3

- Key: 42 TSP header  
 43 Adaptation field  
 44 Payload

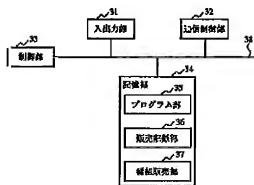


Figure 4

- Key: 31 Input/output unit  
 32 Communication control unit  
 33 Control unit  
 34 Memory unit  
 35 Program unit

- 36 Sales record section  
37 Program vending section

51  
販売メニュー

お客様番号	253221193	52
お客様名	田中 太郎	53
ご購入番組名	トラちゃん	54
放送日時	9月11日10:00~11:00	55
放送局	CS山形	56
ご購入部数	10分~20分	57
使用期間	1ヶ月	58
使用目的	ホームページ	59
他項	¥2,500	62

60                      61

Figure 5

Key:	51	Sales menu screen	
	52	Customer number	253221193
	53	Customer name	Taro Yamada
	54	Name of program being purchased	Tora-chan
	55	Broadcasting date/time	September 11 10:00 - 11:00
	56	Broadcasting station	CS Sanya
	57	Portion being purchased	10-20 min
	58	Use period	1 month
	59	Use purpose	Homepage
	60	Purchase	
	61	Cancel	
	62	Price	¥2,500

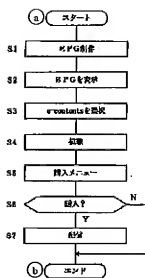


Figure 6

Key: A Start  
 B End  
 S1 Generate EPG  
 S2 Display EPG  
 S3 Select e-comments  
 S4 Viewing  
 S5 Purchase menu  
 S6 Purchase?  
 S7 Delivery

Continued from front page

(51) Int. Cl. <sup>7</sup>	Identification Codes:	FI	(Reference)
H 04 N 5/445		H 04 N 7/04	A
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//H 04 N 7/20 610			

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F Terms (reference)

5C025 A023 A028 B028 C009 D006  
 D003 D001 D005  
 5C063 A001 A003 C036 D003 D013  
 5C064 B001 B005 B018 B023 B002  
 B008 B014 D010